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ABSTRACT

A teaching experiment in Finland was designed to clarify ways to teach argumentation in Finnish higher education and how to motivate students to participate in critical content-area discussions. Finnish students traditionally hesitate to criticize each other's opinions or those of the teacher. The experimental teaching method gave them the opportunity to practice their skills at argument through e-mail and face-to-face discussions. Participants were 46 students of education in the later stages of their academic studies. Discussions in the face-to-face groups were directed by teachers. The discussions in the e-mail groups were textual and were not real-time in nature. Free debate and role play were used in organizing both types of discussions. Comparing the two approaches showed that the e-mail discussions included more grounded disagreements, more elaborative agreements, and more elaborative neutrality than the face-to-face discussions. These findings illustrate the usefulness of e-mail when practicing sophisticated argumentation and discussion. (Contains 31 references.) (SLD)

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ARGUMENTATIVE DISCUSSIONS IN FINNISH HIGHER EDUCATION

Comparing e-mail and face-to-face studies

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University of Warwick, UK, 2 - 4 April

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Introduction

Finnish university studies lack of such interactive study methods that promote students' argumentation and critical thinking skills. This is problematic since the development of these skills is one of the central aims of higher education. One reason for this situation is that Finnish communication and study culture can be described as consensus oriented: Finnish university students are not used to engage in critical argumentative discussions. This paper describes a teaching experiment the aim of which was to clarify the effective means to teach argumentation in Finnish higher education and to better motivate students to participate in critical content-area discussions.

Argumentation in Network Society

The skill of receiving information critically is an essential part of media literacy needed in contemporary society Valo (2000). This skill should be guaranteed to citizens already during primary education. Sinko (2000) characterizes the skills of receiving information in a critical and selective way as new life coping strategies, the promotion of which our school system should particularly take charge of. The critical selection of information presupposes argumentation and critical thinking skills. These skills include the ability to put forward arguments with relevant and many-sided support (Hintikka & Bachman, 1991), the ability to assess the strengths and weaknesses of other people's standpoints (Voss & Means, 1991), and the ability to analyse, synthesize and organise information (Adams & Hamm, 1990). People skilled in argumentation are also able to change or refocus their opinions if they receive new and more precisely defined information (Voss & Means, 1991). People of a networked society should, thus, be taught particularly argumentation skills and critical thinking.

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The argumentation skills of Finnish students have, however, been found to be poor (Marttunen, 1997). One reason for this is that Finnish students lack both a critical attitude towards knowledge and a willingness to engage in critical discussions on the study contents (Steffensen, 1996). Corresponding results are also reported by Mauranen (1993) and Hirsjärvi et al. (1996), who found that the students in a Finnish university seminar hesitated to criticize each others' opinions or those of the teacher, who was experienced as an authority and whose views should not be called into question. The study by Laurinen (1996; see also Ylijoki, 1998) also revealed that Finnish university students found it difficult to participate in seminar debates at the end of their academic studies. University studies in Finland differ, for example, from studies in British universities where the practising of argumentation and debating skills is a natural part of seminar work and where it is common that the arguments of fellow students and teachers are questioned (Mauranen, 1993). In a Finnish university seminar, by contrast, competence is demonstrated by knowing facts and having a holistic view of the particular topic but not by presenting solid and contradictory arguments (Mauranen, 1996). Finnish students usually refuse to criticize each others' or the teacher's opinions even when they are supposed to do so (Steffensen, 1996). When interviewed on this students have reported that they feel uncomfortable in argumentative discussion situations (Mauranen, 1993), that they do not have the competence to comment on other students' seminar papers (Kalaja, 1996), and that they are afraid that their claims and feedback will be taken too personally (Laurinen, 1996). Thus, such study methods which encourage students to participate in argumentative discussions are needed in Finnish higher education.

Recent studies (Allegretti & Frederick, 1995; Wesp & Montgomery, 1998) have indicated that argumentation and critical thinking skills develop in learning environments based on mutual interaction between students. Different kinds of opinions and arguments arise in mutual interaction. Interaction is also a means to discuss and analyse peoples' different points of view together. Numerous studies have also shown the positive effects of the use of information and communication technologies in educational settings: student-student interactions have been increased and enriched (Ruberg et al., 1996), the students have learned the study contents more efficiently (Hacker & Sova, 1998), and the level of argumentation in students' texts has been developed (Marttunen, 1997, 1998).

In this study Finnish university students' argumentation skills were practised by increasing and enriching student-student communication with the help of information and communication technology. The study is based on previous experiences of applying e-mail in argumentation and discussion courses in Finnish university education (Konttinen & Marttunen, 1991; Marttunen, 1997). However, the problem in these previous experiments has been the lack of comparison between e-mail and other modes of discussion. In the present study this methodological weakness has been solved by organizing students' discussions both in e-mail and face-to-face

environments, and by comparing the quality of their argumentation when using these two modes of study. One aim of the study was to identify such information technology-based learning solutions that could be easily applied on a larger scale. Since all Finnish universities are equipped with e-mail facilities, and these facilities are also available to the majority of university students, e-mail was selected as the electronic tool for the students' discussions.

In an argumentative debate each discussant might select either an agreeing or a disagreeing way to react to the opinions of others, or try to remain as neutral as possible. During practising argumentation attacks indicating disagreement are necessary because they stimulate discussants to concentrate on the grounds of their arguments (Jackson, 1998). Thus, well grounded arguments and counter-arguments by which the original arguments are refuted are elements of high quality argumentative interaction. Finnish students have, however, been found to avoid attacking other people (Steffensen, 1996), and are reluctant to generate social conflicts in discussion situations. This is problematic in terms of learning since the avoidance of conflicts at the social level prevents the possibility of socio-cognitive conflicts, which have been hypotesized to trigger or stimulate learning (see Howe & Tolmie, 1999).

In this study the load of social conflict and excessively personal involvement in the discussions was decreased by role play in which the students were given opposite opinions to defend in such a way that they knew beforehand that the defended stand was not necessarily the same as the personal stand of the defender. Thus, in role play the opposite opinions were given in advance to the students in order to guarantee and maintain the socio-cognitive conflict between the learners during the whole discussion. The other teaching method was free debate in which the students were asked to take a stand and discuss freely on a given topic. The quality of students' argumentation was compared between these two discussion situations. The research questions were the following:

1) How argumentative (disagreeing/agreeing/neutral) were the students' e-mail and face-to-face discussions?
2) Did the learning environment (e-mail vs. face-to-face), and teaching method (free debate vs. role play) affect the quality of the students' argumentation?

Method

Subjects

To collect the data a ten-week course on argumentation was organized during the spring term 1998 at the Department of Education in the University of Jyväskylä, Finland. The subjects (n = 46) of the study, 37

women and 9 men, were students of education in the later stages of their academic studies. The majority (37/46) of them were full time students of the university, while 9 students studied in the Open University. Three teachers from the faculty of education in the university also participated in the study.

Structure and Content of the Course

Learning environments

The course consisted of a) lectures on the theory of argumentation (2 x 2 hours), b) exercises with the course material, and c) 10 weeks of practising argumentation by means of seminar discussions in two face-to-face (n = 7, n = 9) or in two e-mail groups (n = 5, n = 6) based on course material using different working methods. The discussions held each week were based on different texts and exercises. The students read the texts and did the exercises before the discussions. The texts and exercises were the same for the e-mail and face-to-face groups. The purpose of both the lectures and the exercises was to support seminar working.

The discussions in the *face-to-face groups* were real-time and oral in nature. The aim was to establish active debates between the students. Eight seminar sessions once a week were organized in both groups. Two of the weeks were reserved for lecture teaching. Each seminar session was based on different text material and exercises relating to it. The students read the texts and did the exercises before each seminar session. Each of the two face-to-face groups had its own teacher. The teachers directed the discussions in such a way that the students presented well-grounded arguments on the subjects encountered in the texts, and counter-arguments to other students' opinions. The teachers also took part in the discussions by presenting their own grounded points of view. The lecturer also acted as teacher in one of the face-to-face groups.

The discussions in the *e-mail groups* were, by contrast, textual and non-real time in nature. During the ten week e-mail course the students exchanged e-mail through a distribution list attached to the e-mail program (Pine for Unix). As a course requirement the students had to write at least three messages a week. In their messages the students were asked to put forward their own arguments on the discussion topics, to present counter-arguments against other students' opinions, and to defend themselves by refuting others' counter-arguments. Both e-mail groups were directed by the same e-mail tutor. The tutor did not write his own contributions to the discussions but provided the students with feedback by commenting on the level of their argumentation and by pointing out those students' messages which included developed argumentation.

Working methods

Free debate and role play were methods used in organizing the e-mail discussions and 7 out of the 16 face-to-face seminar sessions. The rest 9 face-

to-face sessions were organised by using problem-solving discussion and panel discussion as working methods. The data relating to these methods are, however, not included in this study.

During the *free debate*, students put forward their own grounded opinions on the questions encountered in the text material, as well as counter-arguments to the claims in the material and in other students' messages. The students could freely emphasize those topics that they found interesting, controversial, or important. In the *role play*, half of the students were given a point of view that they had to support, and the other half were given an opposite standpoint. The viewpoint given to a student did not necessarily represent his/her own personal point of view on the issue in question.

Course material

The course material consisted of argumentative texts and exercises relating to them. The texts included argumentative writings taken from newspapers and periodicals, as well as scientific texts relating to four educational topics: 1) Sex roles and equality in education; 2) Discipline problems in school work: causes and proposed solutions; 3) The compulsory teaching of Swedish in school, and 4) Physical punishment as a child-rearing method. The exercises introduced the students to the content and argumentative structure of the texts, and in this way prepared them for the seminar discussions.

Data

The data of the study consists of the students' face-to-face discussions (7 x 1,5h) and e-mail messages (n = 326). The face-to-face sessions were video-recorded, and the students' e-mail discussions were stored on the computer. The eight female students sent 219 (67 %) messages, and the three male students sent 107 (33 %) messages. The students sent about the same number of messages on the four different discussion themes (23 % - 26 %).

Data analyses

In the analysis of the students' e-mail messages a reference (n = 362) was taken as the unit of analysis (c.f. Mellar & Howell-Richardson, 1999). A reference was a reply to a thought (i.e. a claim, a ground, an argument, a point of view) expressed by another student earlier during the course. The students' references were classified according to the nature of their position taking: whether the students disagreed, agreed or had taken a neutral position in relation to the standpoint of a fellow student. The references indicating disagreement were further classified as grounded and non-grounded disagreements, and the references indicating agreement were classified into elaborative and non-elaborative agreements. The subcategories of the neutral positions were accordingly elaborative and non-

elaborative neutrality. The other reference categories were "questions", "answers to questions", and "some other" (mainly short comments).

The video-recordings of the students' face-to-face discussions were transcribed. The unit of analysis was a student's speech turn (n = 1657) during the discussions. The speech turns were classified according to the variable "Position taking" in the same way as in the analyses of the e-mail messages. The classification categories were, accordingly, grounded and non-grounded disagreement, elaborative and non-elaborative agreement, elaborative and non-elaborative neutrality, question, answer and other.

Results

Table 1. Students' position taking in e-mail and face-to-face studies(%)

POSITION TAKING	E-MAIL STUDY (n = 362)			FACE-TO-FACE STUDY (n = 1657)			TOTAL (n = 2019)		
	FD[1]	RP[2]	Tot.	FD[3]	RP[4]	Tot.	FD[5]	RP[6]	Tot.
Disagreement (grounded)	16	31	23	11	19	15	12	21	16
Disagreement (non-grounded)	2	2	2	3	16	9	3	13	8
DISAGREEMENT TOT.	**18**	**33**	**25**	**14**	**35**	**24**	**15**	**34**	**24**
Agreement (elaborative)	23	11	17	13	10	12	15	10	13
Agreement (non-elaborative)	10	3	7	22	16	19	20	13	17
AGREEMENT TOT.	**33**	**14**	**24**	**35**	**26**	**31**	**35**	**24**	**30**
Neutrality (elaborative)	38	40	39	12	9	11	17	15	16
Neutrality (non-elaborative)	4	6	5	13	11	12	11	10	10
NEUTRALITY TOT.	**42**	**46**	**44**	**25**	**20**	**23**	**28**	**25**	**26**
QUESTION	**1**	**3**	**2**	**4**	**4**	**4**	**3**	**4**	**3**
ANSWER	**3**	**2**	**2**	**6**	**5**	**6**	**6**	**4**	**5**
OTHER	**4**	**2**	**3**	**15**	**12**	**14**	**13**	**10**	**12**
TOTAL	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

FD = Free debate; RP = Role play; [1] n=187; [2] n=175; [3] n=900; [4] n=757; [5] n=1087; [6] n=932

During the e-mail studies almost in half (44 %) of the references to other messages the writer had taken a neutral position in relation to a fellow student's standpoint (Table 1). In almost all of these references the student had also further elaborated the particular issue. The e-mail students had shown disagreement in 25 % of the references and 24 % of the references

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indicated agreement. The students' disagreements were mainly grounded and most of their agreements were elaborated.

The students most commonly expressed agreement (31 %) during their face-to-face discussions (Table 1). The majority of this agreement was non-elaborative. Furthermore, 24 % of the students' speech turns indicated disagreement and 23 % indicated a neutral position in relation to a fellow student's standpoint. In most cases the students grounded their disagreement, even though most of their neutral speech turns were non-elaborative.

The comparisons of the quality of the e-mail and face-to-face students' interaction during the course indicate that disagreement (25 % vs. 24 %) and agreement (24 % vs. 31 %) were almost as common in both environments. Neutral positions were, however, more common during e-mail than face-to-face studies (44 % vs. 23 %). Although the amount of disagreement and agreement was about the same in both environments, the e-mail students grounded their disagreement and put forward elaborative agreement more often than the face-to-face students. Accordingly, most of the e-mail students' neutral comments were elaborative while among the face-to-face students they were mainly non-elaborative. It is also worth noticing that the comments classified in the category "Other" were much more common during face-to-face than during e-mail discussions (14 % vs. 3 %).

When focussing on the change in the quality of the students' interaction along with the change of working method from free debate to role play it can be noted that the amount of grounded disagreement of both the e-mail (16 % vs. 31 %) and face-to-face students (11 % vs. 19 %) increased. However, it is worth mentioning that the amount of non-grounded disagreement increased simultaneously with grounded disagreement among the face-to-face students (3 % vs. 16 %) while it remained at the same level among the e-mail students (2 % vs. 2 %). Furthermore, although the amount of both elaborative and non-elaborative agreement decreased in both environments along with the change of working method, non-elaborative agreement during role play was much more common during face-to-face than e-mail studies (16 % vs. 3 %).

Discussion

The result that the e-mail discussions included more grounded disagreements, more elaborative agreements, and more elaborative neutrality than the face-to-face discussions indicates the usability of e-mail when practising sophisticated argumentation and discussion. When the students wrote their messages the argumentative genre both structured the way they organized their earlier knowledge about the content area in question and triggered knowledge transforming and learning (see Klein,

1999; Newell, 1984; Bereiter & Scardamalia, 1987; Scardamalia & Bereiter, 1991). Argumentative e-mail debates can also be seen as one form of collaborative writing in spite of its asynchronous nature. Collaborative writing tasks are especially suitable for university students because they challenge students to undertake responsible learning (Tynjälä & Laurinen, 2001; Laurinen & Tynjälä, 2001).

The proportion of disagreements was almost the same in e-mail and face-to-face studies (25 % and 24 %). It is interesting to note that when the students indicated an opposite stand in most cases they grounded it whereas the agreements were not so often elaborated. This is inconsistent with the previous suggestion about cultural reluctance to present opposing points in front of other persons. The grounds and explanations soften the presentations of disagreement very effectively since they direct the receivers' attention from confrontation to the rivalry of groundings. But even the rival grounds and reasons do polarize the issue in question instead of highlighting the complexity of the world. For this reason, perhaps, the communication culture tends to be consensus oriented in Finland. In Finnish *consensus culture* the goal is to mediate and defuse polarization whereas in *adversarial argument culture* criticism, attack, or opposition are predominant ways of responding to people or ideas (Tannen, 1998, p. 7). Argument culture is, according to Tannen, prevalent in the United States, in the public press and media, at least. Thus, cultural differences put Finnish students in an unequal position compared with other cultures because they are used neither to following nor to participating in argumentative debates.

When comparing the position taking in free debate and role play between the face-to-face and e-mail students it was found that in the face-to-face situation the proportion of non-elaborative agreements (22 % and 16 %) and non-elaborative neutrality (13 % and 11 %) remained rather high in both working methods and the proportion of non-grounded disagreements was higher in role play (16 %) than in free debate (3 %). This was not the case in e-mail in which the proportion of non-grounded disagreements (2 % and 2%) and non-elaborative neutrality (4 % and 6 %) was small in both working methods and the percentage of non-elaborative agreements was smaller in role play (3 %) than in free debate (10 %). Nevertheless, there is no reason to be worried about the rather large amount of non-grounded and non-elaborative speech turns in face-to-face discussion if well-grounded and elaborated speech turns are presented, too. As a matter of fact, the short indications of agreements and disagreements and rapid neutral comments work as a means to maintain group cohesion. The short speech turns keep the debate going and provide positive emotional feedback for those persons who have been brave enough to present their opinions.

Since the proportion of grounded disagreements was greater in role play than in free debate among e-mail (31 % vs. 16 %) and face-to-face students (19 % vs. 11 %) it can be preliminarily concluded that role play as a working method better motivates students to engage in argumentative

discussions than does free debate. This conclusion applies, however, more strictly in an e-mail environment as compared to a face-to-face situation. In addition, it is worth remembering that free debates preceded role plays in the design of the present study; consequently, the learning effect provides an alternative explanation for the increase of grounded disagreements in this study. It is also possible that both role play and learning have an effect on the number of grounded disagreements.

The advantage of role play when practising critical argumentation is supported by previous studies on the emergence of skill in argumentation. On the basis of three different studies Stein and Bernas (1999) conclude that arguers, independent of age, have approximately twice as many reasons for supporting their own position as they have for supporting the opposing position. This conclusion supports the pedagogical value of role play, too, since it is an efficient way to motivate students to think about issues from at least two positions. Robertson and Rane-Szostak (1996) also found that when students were given a role different from the one they normally take in group discussions they were prompted to think critically and they become more sensitive to other students' perspectives. International comparisons of e-mail debates between students in different countries and from different cultures and contexts await future research.

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